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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/595,624	05/01/2006	Christophe Colignon	LAV0313156	3686

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EXAMINER

NGUYEN, TU MINH

ART UNIT	PAPER NUMBER
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3748

MAIL DATE	DELIVERY MODE
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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/595,624	Applicant(s) COLIGNON, CHRISTOPHE	
	Examiner TU M. NGUYEN	Art Unit 3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. An Applicant's Amendment filed on December 18, 2007 has been entered. Claims 1-3 have been amended; and claims 7-20 have been added. Overall, claims 1-20 are pending in this application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 6, 11, 12, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtake et al. (6,931,842) in view of Kuentler et al. (6,594,990).

Re claims 1 and 9, as shown in Figures 1-10, Ohtake et al. disclose a system and a method for assisting the regeneration of depollution means (41), and integrated in an exhaust line (2) of a motor vehicle diesel engine (1), and in which the engine is associated with common rail means (16) for feeding fuel to the cylinders of the engine and adapted, at constant torque, to implement a strategy of regeneration by injecting fuel into the cylinders in at least one postinjection, the system comprising:

- detector means (step S3 in Figure 3) for detecting a request for regeneration and thus for postinjection;

- detector means (32, Figure 4) for detecting that the vehicle accelerator pedal is being raised;

- acquisition means (38) for acquiring the temperature downstream from the catalyst-forming means;

- determination means for determining, on the basis of the temperature, a maximum duration for applying postinjections during a stage in which the engine is returning to idling as a result of the accelerator pedal being raised (see step S22 with Yes answer, step S23 with No answer, steps S29-S30 with Yes answer, steps S33-S34, steps S35-S36 with No answer, step S31, step S41 with Yes answer, step S42, step S43 with Yes answer, and step S44; also see Figures 8-9 and lines 39-51 of column 9); and

- cutoff means (step S36 with Yes answer) for immediately cutting off the postinjection as soon as the duration of postinjection use has reached the predetermined maximum duration of application during the stage in which the engine is returning to idling as a result of the acceleration pedal being raised.

Ohtake et al., however, fail to disclose that the depollution means is associated with an oxidation catalyst-forming means.

As shown in Figure 1, Kuenstler et al. disclose a method for regenerating a diesel particulate filter (10). Also as shown in Figure 1, Kuenstler et al. teach that it is conventional in the art to include an oxidation catalyst (9) located upstream from the particulate filter (10) so that during a regeneration of the filter and when an operating temperature of the oxidation catalyst has been reached, a post fuel injection is made during an expansion stroke to provide unburned fuel to the oxidation catalyst so that the fuel is oxidized by the catalyst to raise an exhaust gas

temperature. It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to have utilized the oxidation catalyst taught by Kuenstler et al. in the system of Ohtake et al., since the use thereof would have been routinely practiced by those with ordinary skill in the art to effectively remove particle matter in the exhaust gas.

Re claims 2 and 12, in the modified system and method of Ohtake et al., the depollution means comprises a particle filter (41).

Re claims 6 and 16, in the modified system and method of Ohtake et al., the engine is associated with a turbocharger (21).

4. Claims 3, 7, 13, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtake et al. in view of Kuenstler et al. as applied to claims 1, 2, 11, and 12, respectively, above, and further in view of Asanuma et al. (U.S. Patent Application 2002/0007629).

The modified system and method of Ohtake et al. disclose the invention as cited above, however, fail to disclose that the depollution means comprises a NO_x trap.

As shown in Figure 18, Asanuma et al. disclose a device for purifying an exhaust gas of a diesel internal combustion engine, comprising a particle filter (70). As depicted in Figure 22 and indicated in paragraphs 0091-0092, Asanuma et al. teach that it is conventional in the art to include a NO_x trap and a noble metal catalyst on both sides of a partition wall (54) in the particle filter so that the filter is adapted to remove and purify harmful NO_x emissions in the exhaust gas. It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to have utilized the particle filter taught by Asanuma et al. in the modified system and method of Ohtake et al., since the use thereof would have been routinely practiced by those with

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ordinary skill in the art to remove and purify harmful NO_x and particulate matter emissions in an exhaust gas stream.

5. Claims 4-5, 8, 9, 10, 14-15, 18, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtake et al. in view of Kuenstler et al. as applied to claims 1, 2, 3, 7, 11, 12, 13, and 17, respectively, above, and further in view of Rao (U.S. Patent 4,655,037).

Re claims 4, 8-10, 14, and 18-20, the modified system and method of Ohtake et al. disclose the invention as cited above, however, fail to disclose that the fuel includes an additive for becoming deposited together with the particles with which it is mixed on the depollution means in order to facilitate regeneration thereof.

Rao discloses a carbon ignition temperature depressing agent and a method of regenerating a particle filter utilizing the agent. As indicated on lines 30-42 of column 3 and line 58 of column 3 to line 14 of column 4, Rao teaches that it is conventional in the art to include an additive (metal oxide) in an engine fuel so that the additive is deposited together with the particles with which the additive is mixed on a particle filter in order to facilitate regeneration thereof by reducing an ignition temperature of the particles. It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to have utilized the additive taught by Rao in the modified system and method of Ohtake et al., since the use thereof would have been routinely practiced by those with ordinary skill in the art to save fuel or electricity by reducing an ignition temperature of the particles.

Re claims 5 and 15, in the modified system and method of Ohtake et al., as taught by Rao, the fuel includes an additive (metal oxide) forming a NO_x trap.

Response to Arguments

6. Applicant's arguments with respect to the references applied in the previous Office Action have been fully considered but they are not persuasive.

In response to applicant's argument that Ohtake et al. fail to disclose or teach a means for determining, on the basis of a temperature downstream of a catalyst-forming means, a maximum duration for applying postinjections, and a cutoff means for immediately cutting off the postinjection as soon as the duration of postinjection use has reached the predetermined maximum duration of application (page 12 of the Applicant's Amendment), the examiner respectfully disagrees.

As shown in Figures 2 and 5 and indicated in the Abstract, when a deceleration of the engine or the vehicle is detected (in step S22), a controller in Ohtake et al. decreases an exhaust gas temperature from t_{Texh1} to t_{Texh2} by applying a reduced amount of fuel postinjection which is computed in steps S43-S44. Furthermore, Ohtake et al. obviously determine a maximum duration for applying said fuel postinjection because in step S36, when a regeneration time has been completed (step S36 with Yes answer), an exhaust gas temperature control flag is set to zero (in step S38) which results in the cutting off of the fuel postinjection (i.e., routine in Figure 7 is not performed). Thus, even though Ohtake et al. perform a different solution than that presented in the pending application, they still disclose or teach all of the features and limitations in dispute.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., deceleration

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causes a dip in exhaust gas temperature, which causes post-injected fuel un-oxidized after passing through a catalyst) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Communication

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Tu Nguyen whose telephone number is (571) 272-4862.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Thomas E. Denion, can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TMN

March 14, 2008

/Tu M. Nguyen/

Tu M. Nguyen

Primary Examiner

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